



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,665	09/30/2004	Wen-Jian Lin	10396-US-PA-1	5664

31561 7590 03/08/2005

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

EXAMINER

AKKAPEDDI, PRASAD R

ART UNIT	PAPER NUMBER
----------	--------------

2871

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/711,665

Applicant(s)

LIN, WEN-JIAN

Examiner

Prasad R Akkapeddi

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura et al. (Kimura) (U.S. Patent No. 6,195,196) in view of Stern (U.S. Patent No. 5,771,321).

As to claim 1: Kimura discloses an image forming apparatus (display) that exhibits optical interference effects (col. 4, lines 11-13) that has a transparent substrate (17, viewed from the top of Figs. 1 and 3), an inner front flexible thin film (9) that has a light diffusion layer (col. 4, lines 3-4), a plurality of electrodes (13), a patterned support layer (5), an optical film (9) on the first electrodes (13), a plurality of second electrodes (3). In (col. 3, lines 25-31), Kimura teaches that the first and second electrodes are a plurality of band-like electrodes arranged perpendicular to each other, and an air gap between the pair of first and second electrodes.

In the first embodiment, Kimura does not disclose a plurality of optical films on the first electrodes (13).

However, in the later embodiments, Kimura discloses that a dielectric multi layer film mirror is located on each of the first and second electrodes (col. 16, lines 55-67 and Fig. 12). A dielectric multi-layer film has a plurality of films with a high and a low index of refraction.

Kimura teaches that the diffusion layer is on the inner front thin film (9) i.e., on the first electrodes (13) and does not disclose a diffusion layer on the second electrodes (3) that face the first electrodes (13).

Stern in disclosing a micro mechanical optical switch and flat panel display discloses a transparent substrate (38), first electrodes (44), second electrodes (56), a gap (40) and a light scattering layer (diffusion layer) (32) (Figs. 4A-4C).

In addition in (col. 14, lines 31-43), Stern teaches that the optical scattering surface can also be included on both the top (70) and bottom surfaces (32). Hence, the scattering layer (diffusion layer) can be on either the first and/or the second electrodes.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the scattering configuration on either the first and/or second substrates as disclosed by Stern to the device of Kimura to increase the spreading angle of the emitted light and that the arc of viewing angles of light exiting the display is generally around a direction perpendicular to the display surface (col. 14, lines 37-62).

As to claim 2: Stern teaches that the inner-back diffusion layer is supported through the patterned support layer (40 or 48) (Fig. 4C).

As to claim 3: Since Kimura teaches a dielectric multi-layer film (77) in the front surface, it has at least two films, may be more than two (most of the multi-layer films has a stack of 20 to 30 layers of alternating refractive index), a third and a fourth film and as mentioned earlier the purpose of the dielectric multi-layer film is to generate optical interference effects and hence forms a dispersive surface.

As to claim 4: Kimura teaches the use of material such as Indium-tin-oxide, silicon oxide and silicon nitride for various thin film materials (col. 14, lines 67 and col. 12, lines 1-9).

As to claim 5: Kimura discloses that the first (scan) electrodes (13) are made out of Indium-Tin-Oxide (ITO) (col. 12, lines 35-46).

As to claim 6: Kimura discloses that the second electrodes (3) are made out of a metallic material such as Aluminum (col. 12, lines 35-43).

As to claim 7: Kimura discloses that both the front and rear substrates are transparent substrates and made of glass, acrylic resin or the like (col. 21, lines 37-41).

As to claim 8: Kimura teaches that a dielectric multi-layer films (73 and 77) on both the first and second electrodes (col. 16, lines 55-67), and the dielectric multi-layer film is made of composite structure of silicon oxide or silicon nitride or a thin semiconductor film such as polysilicon (col. 18, lines 63-67). Hence the dielectric constant of these materials is different.

Art Unit: 2871

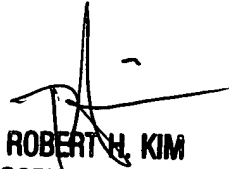
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prasad R Akkapeddi whose telephone number is 571-272-2285. The examiner can normally be reached on 7:00AM to 5:30PM M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PRA

Prasad R Akkapeddi, Ph.D
Examiner
Art Unit 2871


ROBERT H. KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800